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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,440	11/01/2001	Peter C. Vinsel	85710.P049	3554
7812	7590	08/11/2005	EXAMINER	
SMITH-HILL AND BEDELL, P.C. 16100 NW CORNELL ROAD, SUITE 220 BEAVERTON, OR 97006			MERED, HABTE	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,440

Applicant(s)

VINSEL, PETER C.

Examiner

Habte Mered

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06/17/2002</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-40** are rejected under 35 U.S.C. 102(e) as being anticipated by Hegde (US 6,876, 654).

Hegde discloses a packet forwarding method and apparatus and describes how layer 2 and layer 3 switching is done. Hedge's system switches and routes network data packets at high rates with substantially less processing overhead because the layer 2 and layer 3 switching is done without the involvement of the CPU or the Operating System (OS).

3. Regarding **claims 1 and 22**, Hegde discloses a method of forwarding data packets in a network device having an operating system (**See Figure 3, CPU 80; Column 4, Line 5 and 30-35. The operating system is the core software that resides on the CPU.**), the method comprising: initiating a switching microdriver to retrieve a data packet (**Column 5, Lines 60-63; Figure 4 Switching engine 100; In Hegde's system the switching engine 100 in Figure 4 is equivalent to the switching microdriver initiates packet retrieval via the port interfaces 120-1 in**

Figure 4) ; and forwarding the data packet to or from the switching microdriver without involvement of the operating system (**Hegde shows that the switch engine always forwards packets without the involvement of the OS (i.e. CPU) so long as it can resolve where it needs to forward it to by looking at a lookup table. See Column 6, Lines 5-13)**)

4. Regarding **claims 2, 23 and 33**, Hegde discloses a method further comprising performing switching functions by the switching microdriver to forward the data packet. (**See Column 6, Lines 5-13**)

5. Regarding **claims 3, 15, 21, 24, and 34**, Hegde discloses a method wherein performing switching functions by the switching microdriver to forward the data packet includes making any one of a layer 2 and a layer 3 switching decision in the switching microdriver. (**See Figure 6, Steps 40 and 60; Column 10, Lines 14-17**)

6. Regarding **claims 4, 6, 25, 27, 37 and 38**, Hegde discloses a method further comprising forwarding the data packet to a network interface microdriver. (**In Hegde's system the port interface 120-1 in Figure 4 is the network interface microdriver that interfaces with the port and is used by the switch engine to access the ports. Column 6, Lines 7-10**)

7. Regarding **claims 5, 7, 26, 28, 35, and 36**, Hegde discloses a method wherein no context switching is performed by the operating system in conjunction with forwarding the data packet to or from the switching microdriver. (**Hegde clearly points out that the CPU or OS involvement forwarding data packets is limited to updating the route table when the switch engine cannot resolve the flow. See**

Column 6, Lines 4-13. In Figures 7 and 8 the CPU is notified only when an entry is not found in a routing or flow table.)

8. Regarding **claims 8, 29 and 39**, Hegde discloses a method wherein forwarding the data packet to or from the switching microdriver includes receiving the data packet from a network interface microdriver. **(Hegde teaches the port interface (i.e. the network interface microdriver) is the link that connects the switch engine with the ports and any packet received or forwarded by the switching engine has to go through the port interface (i.e. network interface microdriver) See Column 5, Lines 50-53 and Column 6, Lines 7-11)**

9. Regarding **claims 9, 16, 30, and 40**, Hegde discloses a method wherein the switching microdriver may perform the functions of a network interface driver for the operating system and may perform the functions of a network interface microdriver without involvement of the operating system. **(Hegde teaches that the CPU is only involved when flow control cannot be resolved and the switch engine is responsible for forwarding data and controlling the forwarding of data to the network interface microdrivers (i.e. port interfaces) which used to be done by the CPU in prior art. See Column 7, Lines 52-65 and Column 13, Lines 45-55)**

10. Regarding **claim 10**, Hegde discloses a method of forwarding data packets in a network device having an operating system **(See Figure 3, CPU 80; Column 4, Line 5 and 30-35. The operating system is the core software that resides on the CPU.)**, the method comprising: indicating that a data packet has been received by a component of the network device from a network interface port **(See Column 5, Lines 16-20);**

initiating a first network interface microdriver to process the data packet(**See Column 5, Lines 50-53; The port interface which serves as the network interface microdriver is responsible for getting the packets from the port to the switch engine. As the switch engine continually monitors packet arrival it has to initiate the port interface to retrieve data from the port and pass the data to the switch engine.**); receiving the data packet at the first network interface microdriver from the component of the network device (**See Column 5, Lines 16-20 and 50-53**); and sending the data packet from the first network interface microdriver to a switching microdriver without involvement of the operating system(**Hegde teaches that the CPU or OS is involved in any part of data packet receiving and forwarding when a flow is unresolved. Column 6, Lines 5-13**).

11. Regarding **claims 11 and 19**, Hegde discloses a method further comprising forwarding the data packet from the switching microdriver to a selected location without involvement of the operating system. (**See Column 6, Lines 5-13**)

12. Regarding **claim 12**, Hegde disclose a method wherein involvement of the operating system comprises the operating system performing a context switch. (**Performing a context switch or interrupt for an operating system is standard and must.**)

13. Regarding **claim 13**, Hegde discloses a method wherein involvement of the operating system comprises the operating system initiating an interprocess communication facility. (**Hegde discloses that the CPU Interface 110 in Figure 4 facilitates interprocess communication facility. See also Column 5, Lines 45-50**)

14. Regarding **claims 14 and 20**, Hegde discloses a method wherein the selected location is a second network interface microdriver. **(Hegde discloses that the switch engine can forward data packets from a first port interface to a second port interface. Column 6, Lines 5-10)**

15. Regarding **claim 17**, Hegde discloses a method of forwarding data packets in a network device having an operating system (See Figure 3, CPU 80; Column 4, Line 5 and 30-35. The operating system is the core software that resides on the CPU.) , the method comprising: forwarding a data packet at the device driver layer in the network device, without the operating system performing context switching in conjunction with forwarding the data packet. **(Hegde shows that the switch engine always forwards packets without the involvement of the OS (i.e. CPU) so long as it can resolve where it needs to forward it to by looking at a lookup table. See Column 6, Lines 5-13)**

16. Regarding **claim 18**, Hegde discloses a method further comprising: indicating that the data packet has been received by a component of the network device from a network interface port**(See Column 5, Lines 16-20)**; initiating a first network interface microdriver to process the data packet**(See Column 5, Lines 50-53; The port interface which serves as the network interface microdriver is responsible for getting the packets from the port to the switch engine. As the switch engine continually monitors packet arrival it has to initiate the port interface to retrieve data from the port and pass the data to the switch engine.)**; receiving the data packet at the first network interface microdriver from the component of the network device **(See Column**

5, Lines 16-20 and 50-53); and sending the data packet from the first network interface microdriver to a switching microdriver (**Column 6, Lines 7-10**).

17. Regarding **claim 31**, Hegde discloses a system (**See Figures 3 and 4**) comprising: an interprocess communication facility comprising an operating system aware portion (**Figure 3, CPU 80 and Figure 4, element 110**) and a non-operating system aware portion (**Figure 4, Switch Engine 100**); a switching microdriver (**Figure 4, Switch Engine 100**); coupled to the interprocess communication facility (**Figure 3, CPU 80 and Figure 4, element 110**) to perform switching decisions without using an operating system aware portion of the interprocess communication facility (**See Column 6, Lines 3-13**); a network microdriver coupled to the switching microdriver(**Figure 4, element 120, Column 5, Lines 50-53**); and a physical port coupled to the network microdriver (**Figure 4, element 50, Column 5, Lines 50-53**).

18. Regarding **claim 32**, Hegde discloses a system wherein the switching microdriver retrieves a data packet and forwards the data packet to or from the switching microdriver without involvement of the operating system. (**See Column 6, Lines 5-13**)

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following US Patents and US Application Publications are cited for disclosing related subject matter:

US Patent (6, 570, 875) to Hegde

US Patent (6, 907, 042) to Oguchi

US Patent (6, 499, 065) to Hyder et al

US Pub. No. (2005/0055460) to Johnson et al


Int. Pub. No. (WO 99/00936) to Muller

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08-08-2005
HM


JOHN PEZZLO
PRIMARY EXAMINER